

The Analysis of the relationship between growth rate, bank loans ratio, financial performance and ROI with company's commercial credit

Heydar Amiran¹, Tahmoures Sohrabi¹, Fahimeh Dabbaghi Koupayi²

¹Assistant Professor in Industrial Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran; ²MA in Industrial Management (Production), Central Tehran Branch, Islamic Azad University, Tehran, Iran

Abstract

The aim of this study was to evaluate the influence of the growth rate, bank loans ratio, financial performance and returns on investment on corporate commercial credit. This study was conducted based on library documents and causal-analytical study (panel data). In this study, the financial information of 104 firms listed in Tehran Stock Exchange during 2008- 2013 was collected. SPSS 20 software was used to analyze the results of the study. Findings show that there is a significant and direct relation between growth rate and companies commercial credit, but there is a negative relationship between the ratio of bank loans and commercial credit. Also, there is a significant relationship between financial performance and commercial credit. There is a direct significant relationship between returns on investment and commercial credit too.

Keywords: growth rate, trade credit, bank loans, financial performance, returns on investment and panel data

Introduction

Stock market is one of the major markets of each country's economic, because it is considered as a center for collecting the savings and stagnant sources of persons and companies and leading to factories and ultimately causes economic growth and social welfare (Wei Yu et al., 2011). Several studies have been done based on data published by the Stock Exchange, that all of them trying to find the relationships between unknown variables and available. The aim of these findings is to enhance the awareness of investors about the situation of the firms listed in stock exchange, and ultimately a better understanding of the company's performance and more accurately forecasts and to reduce the future risks. (Madhogaryap et al, 2009). On the other hand, these discovered relationships will be used by the company's management to estimate and analyze the results of their performance and could lead to modification and change of the procedure and even the managing approach (Bugas et al, 2009).

Fluctuations in earnings along with the enhancing of the expected stock returns, represent the optimal performance of companies according to the presence or absence of financial constraints (Burkart and Ellingsen, 2004). One of the most important factors in appropriate deciding of the stockholders is the fluctuations of expected returns associated to decisions closer to the reality about investment. Because the lack of making properly anticipates have negative effects for the individual or decision maker entity. On the other hand it is important how business unit managements make predictions (Choi and Kim, 2005). Most previous studies in connection to companies commercial credit, suggest that the reputation of the company is made up of a large proportion of total assets. The scale of credit related to the total assets in US companies was 17.8 per cent in the early 1990s. The ratio of cash reserves throughout 16 European countries ranged between 16 and 24 percent.

According to these papers companies using trade credit are looking for alternative for short-term financing and providing loans of contracting institutions.

The present paper, considering the main objective, conducted to answer this question: whether the growth rate, bank loans ratio, financial performance and returns on investment are effective on companies commercial credit listed in Tehran Stock Exchange.

Theoretical Foundations of research

Returns on investment (ROI)

One of the aims of providing information on cash flows is the assessment of liquidity and the entity's ability to pay its obligations. Liquidity is the relative ability to convert assets into cash and sometimes is referred to the nearness of assets to cash, as well as the relationship between short-term debts and cash and near-cash items. In a broader sense the ability to pay obligations refers to the ability to collect cash or having available funds for any purpose that may be required by the institution (Rajan and Zingales, 1995). In the strict sense it means the entity's ability to pay the obligations at maturity. Financial flexibility means the ability of an entity to acquire cash in a short time in order to take advantage of opportunities or deal with unforeseen events. These three concepts are in relation to each other. But the flexibility is including a concept wider than ability to pay obligations and also the ability to pay obligations is broader than liquidity. The ability to pay the obligations is necessary for a corporation to continue its operations. Inability to pay obligations may result in bankruptcy, compulsory liquidation as well as losses for the stockholders and creditors (Jamshidi, 2002).

Information on the state of liquidity could be found on the balance sheet. Classifying the balance sheet to current assets and non-current assets could be a little useful for clarification the liquidity situation. Since this kind of classification includes some drawbacks. For example deferred fees and creditors are of current items, but have no effect on cash flow. Other cash assets such as inventories may also not convertible to cash flow (Opler and Titman, 1994).

Growth rate and stock market performance

The liquidity means the ability to cash the stocks in stock market. Investments have not the same situations in terms of liquidity. Some investments are difficult items for sale and the seller should pay discount or commission. In general, when there is no secondary market, liquidity risk is high. Even in the presence of a secondary market, there is a liquidity difference. This risk indicates that the activities or investments not sold in short-term at market prices have weak liquidity (Shafizadeh, 1996).

Bank loans and commercial credit

Some of the financial measures which are more important to evaluate the performance of the firms Include: return on investment, residual income and return on sales, economic value added (EVA) and market value added, balanced score card (BSC), value-based performance indicators in the evaluation process, to determine the value created by firms, compared to traditional indicators based on historical data have a wider range of application. The informed and sustainable judgment is more profitable because targets the basic concepts of value and value creation (Namazi and Kermani, 2008).

Many firms use operating profit as an internal as well as accounting measure, while the firms complete the measure with the external financial information (stock price), external non-financial information (customer satisfaction) and Internal non-financial information (delivery time). Firms address these measure by balanced score card (BSC). The report includes the following:

- The criteria for profitability: operating profit and revenue growth
- The criteria for customer satisfaction: market share, customer responsiveness, on time operations
- The criteria for efficiency, quality and time, place of performance variance, absorbed overhead variance
- Innovation criteria: the number of patents, the number of new goods

Balanced score card (BSC), is a Comprehensive index measuring the performance of the management. The index was first proposed by Norton and Kaplan assessing both financial and non-financial criteria (Hejazi and Dustian, 2006).

Background of the study

Yumatlo (2014) in a study reviewed the "the relation between financial leverage and investment decisions" in manufacturing companies listed in the Turkey's stock exchange. The study used panel data by the fixed effects to estimate multivariate linear model. Findings indicate that the financial leverage has negative impact on investment decisions and companies that have more debt are less willing to invest in capital assets.

Sung (2010) surveyed the relationship between financial leverage and investment opportunities in Chinese companies. The study, measured the financial leverage using four different ratios. Findings suggest that companies with more growth have less leveraged ratio. Also larger companies endure more debts to invest than smaller companies. Kevin and Vicky (2008) surveyed the relationship between earnings quality and investment in capital assets during the years 2005-2012. The results show that lower earnings quality companies, have smaller stock returns and their investment in capital assets is less sensitive to cash flows input. These companies, compared to other companies, allocated fewer resources to capital assets and have less "return on assets".

Nachga and fontine (2012), in an article entitled "Economic growth and total productivity factors of production in Nigeria" empirically examined the resources of total production growth as well as the determinants of total productivity of production factors in Nigeria over the years (2003-2011). They used indicators reflected negative growth (TFP) and physical capital per capita, to investigate causes of factors led to gradual decline in GDP in the final years.

Yu (2011) examined the relationship between accounting transparency and corporate credit situation. According to Yu it can be predicted that the transparent published accounting information, reduces credit risk. He reviews the companies listed on the New York Stock Exchange and showed that there is a significant negative correlation between the accounting information transparency and credit risk so that incomplete and vague information disclosure, increases credit risk.

Cheng (2010) surveyed the relationship between stock returns and accounting profitability in Greece's companies. It also tested hypotheses adding variables such as size and the life cycle of the company to improve the explanatory power of stock returns. The results show that the explanatory power of profitability is very weak for concurrent stock efficiency.

Although Chow test indicated considerable instability for the relationship between profitability and efficiency during the period: When the regression was adjusted to account for the size, the results improved, and the idea that firm size is an important factor in explaining the relationship between profitability and efficiency, was strengthened. Although the results derived of hypothesis did not support the difference between information content of profitability to explain stock returns, according to the company life cycle.

Khajavi and Nazmi (2010) examined "The relationship between earnings quality and stock return with an emphasis on the role of accruals in Tehran Stock Exchange" during the years 2001-

2009. Cross-sectional regressions were used to test the hypotheses and results indicated that the returns not affected by the accrual.

Moradi and Safavi (2009), in a paper entitled "The growth of total factors of productivity in Iran business sector" identified important and effective components of the growth of total factors of productivity (TFP) of the country's business sector and estimated them in the identified model using data for years (2003-2008). They primarily based on the contribution of the factors of production in the sectors growth, measured and put in function the index of efficiency of production factors and concluded that the growth of capital stock per capita, average growth of obtained years and real exchange rate had a positive impact but inflation rates had a negative impact on the growth of total factors of productivity.

M. Zivardary (2008), investigated the relationship between trading volume, stock prices and the volatility of returns, up on data from 15 companies of 50 active stock companies during March 28, 2004 to June 1, 2007 listed in the four lists in year 2004. The study, tried to examine concurrent and causal relationship between trading volume, price changes and volatility returns. The results confirmed both the concurrent relationship between trading volume and stock price changes and the concurrent relationship between trading volume and absolute value of stock price changes, as well as the feedback association (bilateral) between trading volume and stock returns. The hypothesis that the trading volume explains the volatility of returns as well as simultaneously entering information into the market could not be verified.

Research Methodology

The research method means all ways that immune researchers from error and provides them the possibility to get to the truth. In other words, scientific research methods, is following a systematic approach must be considered in the use of statistical methods and linking of research factors (Delavar, 2007).

The present paper is a correlation study both of the nature and the content. Also the research conducted in the inductive reasoning framework. It means that gathering data to verify or refute the hypotheses was done in an inductive form, and the theoretical foundations and research background reviewed using, library documents, papers and websites in the analog form. The present study is an applied research in terms of purpose and the type of work in which real data and different statistical methods are used to verify or reject hypotheses.

The statistical method used in this research is panel data model that used in order to study the relationship between independent variables and the dependent variable from two different aspects.

The study population consisted of all companies listed on Tehran Stock Exchange. According to the Tehran Stock Exchange official website companies listed by the end of 2013 include 520 companies in 37 industry groups. Therefore, the population in this study were all listed companies in Tehran Stock Exchange for a period of six years, from 2008 to 2013. In this study screening methods (FA) is used for choosing sample so as to be the sample an appropriate representative of the target population. For this purpose, the following criteria were considered. If a company met all the criteria have been selected as a sample. Ultimately 104 companies were selected from the population.

Findings of the study

Descriptive statistics of the variables after screening and removing the outlier data using software SPSS 20 summarized in the table below.

Table 1: Descriptive statistics of the variables

Variable	Elongation	Skewness	Maximum	Lowest	Standard deviation	Average	Number of observations
Business credit	158/907	8/987	6/8448	0/0110	0/3504	0/6290	624
growth rate	16/953	3/628	2/9326	0/0001	0/3554	0/2661	624
The ratio of bank loans	31/753	4/931	2/5554	0/0000	0/2540	0/1386	624
Financial performance	428/319	19/914	17/4459	0/0001	0/7681	0/1497	624
ROI	-0/770	0/861	0/9986	0/0000	0/3194	0/3365	624
The proportion of institutional ownership	0/079	0/439	0/9035	0/6791	0/0437	0/7700	624
Size of the company	0/576	0/731	8/0074	4/7761	0/6116	5/9200	624
Company life	0/446	0/266	3/1943	0/0027	0/5351	1/2008	624

Normality test

If the level of statistical significance of the test is more than 0/05 (Prob> .05), H₀ of normal distribution of the variable will be accepted. Kolmogorov-Smirnov (K-S) test results provided for the dependent variable and the sample companies commercial credit. Considering the significance of K-S statistic is less than 0/50 for the variable commercial credit, so the hypothesis H₀ of normal distribution of the variables was rejected at 95%, indicating that the credit variable is not normally distributed.

Normality of the dependent variable is a prerequisite for regression models, so we require normalizing this variable before testing the hypothesis. In this study, to normalize data Johnson transfer function were employed and then analyzed by Minitab 16 software. The results of the K-S test after the data normalization process is as below.

Table 2: The normality of the dependent variable results after normalization process

Variable	(Sig)	(K-S)	(N)
Business credit	0/000	4/240	624

Research Hypothesis

H1. There is a significant relation between the rate of growth and company's commercial credit.

H2. There is a significant relation between the bank loans and company's commercial credit.

H3. There is a significant relationship between financial performance and company's commercial credit.

H4. There is a significant relationship between return on investment and company's commercial credit.

Correlation coefficient test

In this section, using Pearson's correlation coefficient the relationship between the variables and the correlation between them were assessed. Matrix of coefficient correlations between variables is provided.

Based on the results of Pearson statistics, company's commercial credit has a significant positive correlation with company life, but a significant negative correlation with the proportion of institutional ownership and firm size.

Growth rates also positively correlated with the ratio of bank loans, the proportion of institutional ownership and firm size. The ratio of bank loans, also positively correlated with the financial performance. The proportion of institutional ownership of stockholders has a positive and significant correlation with the size of the company.

Table 3: Institutional ownership of capital efficiency and financial performance of the business credit growth rate of bank loans

	Business credit	growth rate	The ratio of bank loans	Financial performance	ROI	The proportion of institutional ownership
Business credit (<i>P-Value</i>)	1					
growth rate (<i>P-Value</i>)	0/037 (0/353)	1				
The ratio of bank loans (<i>P-Value</i>)	0/033 (0/414)	0/829 (0/000)	1			
Financial performance (<i>P-Value</i>)	0/044 (0/275)	0/021 (0/602)	0/229 (0/000)	1		
ROI (<i>P-Value</i>)	-0/027 (0/501)	-0/018 (0/662)	-0/028 (0/488)	-0/034 (0/396)	1	
The proportion of institutional ownership (<i>P-Value</i>)	-0/108 (0/007)	0/128 (0/001)	0/064 (0/111)	-0/009 (0/824)	-0/023 (0/563)	1
size of the company (<i>P-Value</i>)	-0/103 (0/010)	0/133 (0/001)	0/069 (0/085)	-0/012 (0/773)	-0/022 (0/579)	0/998 (0/000)
Company life (<i>P-Value</i>)	0/151 (0/000)	0/020 (0/613)	0/017 (0/677)	-0/031 (0/442)	-0/016 (0/683)	0/064 (0/113)

Conclusions and recommendations

A positive significant relationship was observed between growth rate and commercial credit. This study produced results which corroborate the findings of Ahmadi et al. (2011), gay and Cui (2007) and Chen et al (2005): also are consistent with Vieira and Hoskin (2004) but are in contrast with Goddard et al (2002) and Blundell et al (2000). So with 95% confidence we can say that there is a significant relationship between the ratio of bank loans and commercial credit. The results of the second hypothesis of our study are consistent with, W. et al (2012), Kunat (2007) and Yu and Fan (2005) findings and contrasts with Lowe (2003) and Heshmati (2001) findings.

In connection with the approval of the third hypothesis can be concluded that there is a significant relationship between financial performance and company's credit. The results of our third hypothesis are consistent with Gyanity et al. (2013) and Tan et al (2007) findings but contrasts with Fisman and Lowe (2003) and Gomis (2001) findings. There is a direct significant relationship between return on investment and company's commercial credit. The results of our fourth hypothesis are consistent with findings, Huang et al. (2010) and Bossai and Group (2007) but contrasts with Goddard et al (2002) and Bigman (1997) findings.

According to the results of the first hypothesis, further studies should be done to investigate the relationship between growth rate and commercial credit and its impact on the firm's financial constraints. According to the results of the second hypothesis, further studies should be done to investigate the relationship between bank loans ratio and commercial credit and its impact on the firm's expected return on stocks. According to the results of the third hypothesis further studies should be done to investigate the relationship between financial performance and commercial credit and companies' systematic risk. According to the results of the fourth research hypothesis we propose research be done to study the relationship between returns on investment and commercial credit and the effectiveness on the abnormal returns of stocks.

A limitation of this study was the difference between the statistical data reported on Tehran stock exchange website and the information contained in the databases. The research was conducted in the basis of the information provided by the Tehran stock exchange.

Further works need to be done to investigate the impact of industry on the relationships between growth rates, bank loans ratio, financial performance and return on capital and companies commercial credit using of other control variables such as financial constraints and industry indexes, as well as the effect of growth rate, the ratio of bank loans, financial performance and returns on investment on companies commercial credit.

References

- Bruinshoofd, W.A., & Kool, C.J.M. (2004). Dutch corporate liquidity management: new evidence on aggregation. *Journal of Applied Economics*, 7, 195–230.
- Burkart, M., & Ellingsen, T. (2004). In kind finance: A theory of trade credit. *American Economic Review*, 94, 569–590.
- Choi, W.G., & Kim, Y. (2005). Trade credit and the effect of macro-financial shocks: evidence from US panel data. *Journal of Financial and Quantitative Analysis*, 40, 897–925.
- Choi, W.G., & Kim, Y. (2005). Trade credit and the effect of macro-financial shocks: evidence from US panel data. *Journal of Financial and Quantitative Analysis*, 40, 897–925.
- Giannetti, M., Burkart, M., & Ellingsen, T. (2013). What you sell is what you lend? Explaining trade credit contracts. *The Review of Financial Studies* 24, 1261–1298.
- Gourinchas, P-O., & Jeanne, O. (2006). The elusive gains from international financial integration. *Review of Economic Studies*, 73, 715–741.
- Jamshidi, Kh. (2002). *Statistics and its application in management*. Tehran, Payam Noor University Press, p. 253.
- Khajavi, Sh., & Nazemi, A. (2010). The relationship between earnings quality and stock returns by emphasizing on the role of accrual accounting in Tehran Stock Exchange. *Review of Accounting and Auditing*, 40, 37-60.
- Moradi, M.A., & Safavi, B. (2009). The growth of total factors productivity of Iran business sector. *Journal of Modern Economics and Business*, 2.
- Namazi, M., & Shirzadeh, J. (2005). Investigating the relationship between capital structure and profitability of listed companies in Tehran Stock Exchange (with an emphasis on the industry). *Accounting and Auditing Review*, 42, 75- 95.
- Shafizadeh, A. (2006). Research on the relationship between systematic risk and stock returns in the Tehran Stock Exchange. MA Thesis, Tehran University.
- Sung S., (2010). On the interactions of financing and investment decisions. *Managerial Finance*, 35, 691-699.
- Ting, I. W., & Lean, H. H. (2010). Intellectual capital performance of financial institutions in Malaysia. *Journal of Intellectual Capital*, 10 (4), 588-599.
- Wu, W. R., Oliver, M., & Chongfeng, W. (2014). Trade credit, cash holdings, and financial deepening: Evidence from a transitional economy. *Journal of Banking & Finance*.
- Zivdari, M. (2008). Examining the empirical relationship between trading volume and stock returns, returns volatility in companies listed on Tehran Stock Exchange. MA thesis, Faculty of Administrative Sciences, Tarbiat Modarres University.